

Examiner, as will be discussed below, and newly added dependent claims 46 and 47 have been presented.

As to the Examiner's indication that the Consent of the Assignee and the right of the assignee to take action is not proper, this position by the Examiner is not understood. Attached hereto is a copy of the Consent of Assignee in connection with the original reissue application, signed by the Executive Managing Director the Assignee, Hitachi, Ltd., as well as a copy of the Statement under 37 CFR §3.73(b) identifying that Hitachi, Ltd. is the assignee of the entire right, title and interest, with box A indicating that an Assignment was recorded in the U.S. Patent and Trademark Office at reel 9026, frame 0573. Such statement is signed by an attorney of record in accordance with the provisions of 37 CFR §10.18 and applicants submit that the requirements for establishing the right of the assignee to take action have been complied with. However, submitted herewith is a new Statement under 37 CFR §3.73(b) with box A being marked with an X noting that the inventors have given power of attorney to the undersigned which has been executed by the assignee and therefore the right of the undersigned to sign the statement is established.

With respect to the drawings, submitted herewith are substitute drawings, in which the heading relating to the patent have been deleted.

As to the rejection of claims 24-45 under 35 U.S.C. 251 as being based upon new matter, this rejection is traversed and is considered to be overcome by the amendments of the claims herein, and as an aid to the Examiner, will be responded to in accordance with the order set forth in the Office Action dated October 8, 2002.

With respect to claim 42, the Examiner contends that while applicant claims "analog image signals", the original specification described image signals, but it did not describe analog image signals. At the outset, reference is made to the decision of In re Wright, 9 USPQ 2d 1649 (Fed. Cir. 1989), the claimed subject matter need not be described in haec verba in the specification in order for the specification to satisfy the description requirement, and if the specification, as originally filed,

conveys clearly to those skilled in the art the information that the applicant has invented the subject matter later claimed, such is sufficient. Thus, while the Examiner recognizes that the original specification which will be referred to hereafter by the specification of the U.S. Patent No. 5,798,744, describes "image" signals, the term "analog" image signals does not appear in the specification. In light of this position by the Examiner, claim 42 has been amended to delete the reference to "analog" image signals with new dependent claim 46 dependent from claim 42 and reciting the feature that the image signals are analog image signals. Reference is made to col. 10, lines 16-33, describing Fig. 9 as illustrating a driver 21 having a function to generate the scanning signal, the image signal and the clock signal, and that the signal and the power source for driving the driver IC is supplied from the printed substrate 430 having a signal processing circuit composed of ICs, such as a timing converter and other members and a gray scale voltage generating 410 corresponding to respective gray scales, which are displayed by the liquid crystal. Applicants submit that the gray scale voltage generating generates analog signals which are supplied to the driver 21 which are displayed by the liquid crystal. Thus, applicants submit that this disclosure should be considered sufficient in accordance with In re Wright, supra, to recite the feature of analog image signals in new dependent claim 45. Accordingly, this rejection should now be overcome.

With respect to claims 25, 27, 34, 39 and 43, the Examiner contends that a semiconductor island annealed by laser irradiation is claimed and this was not described by the original specification. The Examiner is referred to col. 8, lines 6-18, which describe that "laminated films made of SiN 140 and a Si 110 are manufactured as an island (FIG. 6(a))" and that "an a-Si film containing a large amount of hydrogen in the peripheral region is annealed using a laser" (emphasis added). Applicants therefore submit that in accordance with the decision of In re Wright, supra, the recited features of the aforementioned applications are described

by the original specification of U.S. Patent No. 5,798,744, and such rejection should now be overcome.

As to the rejection of claim 26 with regard to "a liquid driving source voltage", as recognized by the Examiner, the appropriate terminology should be "a liquid crystal driving source voltage", and by the present amendment, claim 26 has been amended to recite such feature, such that this rejection should now be overcome. See, for example, col. 4, line 28 of the original specification of U.S. Patent No. 5,798,744.

With respect to the Examiner's position concerning claim 24, that the driver circuit is claimed to be separate from the pair of substrates and this was not described in the original specification, reference is made to col. 4, lines 26-47, which provides that "The manufacturing size of the driver is smaller than the manufacturing size of the TFT by one order." Furthermore, it is noted that it is readily apparent from the various figures, such as Figs. 9 and 10, for example, the driver 21 is a member separate from the substrate 10 as well as the substrate 12, even though the specification describes mounting of the driver 21 on the substrate 10. Thus, hereagain, applicants submit that the claimed features of claim 24 are supported by the original specification in accordance with the decision of In re Wright, supra.

With respect to claim 26, the Examiner contends that the range of 3V to 5V was not described by the original specification, with the Examiner referring to col. 4, lines 27-29 of the original specification. In light of this position by the Examiner, claim 26 has been amended to recite the feature that an amplitude of a liquid crystal driving source voltage of said at least one driver circuit is no greater than about 5V, which feature, as recognized by the Examiner, is clearly supported in the original specification. Furthermore, by the present amendment, a new dependent claim 47 dependent upon claim 26 has been added, which provides that the amplitude of the liquid crystal driving source voltage of said at least one driver circuit is no greater than about 3V. Hereagain, applicants submit that this feature is also supported by

the original specification at col. 4, lines 27-29, and both claims 26 and 47 have proper basis in the original specification.

As to claims 32, 38 and 42, the Examiner contends that the feature of "an image signal peripheral circuit having a switch matrix" is not described in the specification. Although the Examiner refers to col., 5, lines 48-52 and Fig. 4, the Examiner is referred to the description of Fig. 4 at col. 6, lines 39-57, which provides that "Both the image signal side peripheral circuit 51 and the scanning signal side peripheral circuit 52 are of the switch matrix type." (emphasis added). Thus, claims 32, 38 and 42 have been amended, by the present amendment, to recite the feature of the recited peripheral circuit consists of or has a "switch matrix circuit connected to the display region". Thus, applicants submit that hereagain, the original specification provides support for the claimed subject matter in accordance with In re Wright, supra.

As to the rejection of claims 24-45 under 35 U.S.C. §112, first paragraph, this rejection is considered to be overcome by the present amendment of the claims, as pointed out above with respect to the rejection of the claims as being based upon new matter. Applicants note that the Examiner's rejection as stated of claim 42; claims 25, 27, 34, 39 and 43; claim 26; claim 24; claim 26; and claims 32, 38 and 42; correspond to the rejections of the claims in the same order as being based upon new matter, and such rejections are traversed and are considered to be overcome by the explanation as provided above. Accordingly, applicants submit that claims 24-45, as amended, should be considered to be in compliance with 35 U.S.C. §112, first paragraph.

As to the rejection of claims 34-47 and 41 under 35 U.S.C. §112, second paragraph, as being indefinite, this rejection is traversed insofar as it is applicable to the present claims, and reconsideration and withdrawal of the rejection are respectfully requested. The Examiner notes that claim 34 is indefinite because "said scanning signal" lacks antecedent basis and it appears that text is missing after "said

scanning signal". As noted by the Examiner, claim 34 included typographical or grammatical errors and claim 34 by the present amendment, has been amended to depend from claim 33 rather than claim 32, so as to provide proper antecedent basis and to now recite "said scanning signal peripheral circuit" while indicating that the plurality of semiconductor elements have at least one semiconductor island annealed by laser irradiation. Thus, applicants submit that claim 34 and the dependent claims should now be considered to be in compliance with 35 U.S.C. §112, second paragraph.

As to the rejection of claims 23-45 under 35 U.S.C. 251 as being an improper recapture, this rejection is traversed insofar as it is applicable to the present claims, and reconsideration and withdrawal of the rejection are respectfully requested.

With respect to the Examiner's position concerning recapture, applicants note that by the present amendment, independent claim 23 has been amended to recite features corresponding to that argued concerning patentability resulting in issuance of the original patent, and therefore, applicants submit that the Examiner's position concerning recapture is improper in light of the amendment submitted herewith.

More particularly, claim 23 recites the feature of "at least one part of said at least one peripheral circuit being arranged in a peripheral circuit region which is held between said pair of substrates; and at least one driver circuit which is electrically connected to said at least one peripheral circuit for driving said at least one peripheral circuit being arranged outside of a region which is held between said pair of substrates". Review of the arguments presented in distinguishing over the cited art utilized in rejecting claims in the application resulting in issuance of the patent for which reissue is now requested, evidences that the cited art did not disclose or teach the aforementioned recited features of claim 23, and therefore, claim 23 and the dependent claims should not be subject to the rejection as now stated, in light of the amendment presented herein.

With respect to independent claims 32, 38 and 42 and the dependent claims thereof, applicants submit that the basis for the claim language in the original specification has been pointed out above, and that such claims recite features not previously recited in the application resulting in the issuance of the patent, and that therefore, such features are not subject to the recapture doctrine as contended by the Examiner. Thus, applicants submit that the reissue application with respect to the aforementioned claims is proper and not subject to the recapture doctrine, noting that the purpose of 35 U.S.C. 251 is to correct errors in the original patent. Accordingly, applicants submit that the rejection of the claims as being improper recapture should be overcome.

As to the Examiner's contention that the reissue oath/declaration filed on 09/28/2001 is defective is not understood, in that such represents a copy of the Declaration submitted in the parent application, which is proper in a continuation application, and such declaration at page 2 thereof has the statement "all errors corrected in this reissue application arose without any deceptive intention on the part of the applicant". Accordingly, applicants submit that such declaration should be considered acceptable at this time, noting that upon allowance, a supplemental declaration will be filed providing the statement noted by the Examiner. However, the requirement for filing such a supplemental declaration should be held in abeyance pending determination of allowability of claims in this application. Thus, the rejection as being based upon a defective reissue declaration should be overcome, or held in abeyance pending determination of allowability of claims in this application.

As to the rejection of claims 23, 24, 26, 32, 33, 38, and 42 under 35 U.S.C. 102(b) as being anticipated by Morozumi U.S. Patent No. 4,582,395; the rejection of claims 23, 24, 26, 32, 33, 38, and 42 under 35 U.S.C. 102(b) as being anticipated by Aoki et al U.S. Patent No. 4,644,338; the rejection of claims 23, 24, 26, 32, 33, 38, and 42 under 35 U.S.C. 102(e) as being anticipated by Mochizuki U.S. Patent No.

5,247,375; the rejection of claims 23, 24, 26, 32, 33, 38, and 42 under 35 U.S.C. 102(e) as being anticipated by Kato et al U.S. Patent No. 5,589,406; the rejection of claims 23, 24, 26, 32, 33, 38, and 42 under 35 U.S.C. 102(b) as being anticipated by Misawa et al U.S. Patent No. 5,250,931; and the rejection of claims 32, 38, and 42 under 35 U.S.C. 103(a) as being unpatentable over Hashimoto U.S. Patent No. 4,646,078; such rejections are traversed insofar as they are applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

At the outset, as to the requirements to support a rejection under 35 U.S.C. 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

With regard to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be

"obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

With regard to claim 23 and the dependent claims, as amended, applicants submit that none of the cited art taken alone or in combination under 35 U.S.C. 102 or 35 U.S.C. 103 disclose or teach the structural arrangement as now recited in claim 23, as amended. That is, none of the cited art as pointed out during the prosecution of the application resulting in issuance of U.S. Patent No. 5,798,744 disclose at least one part of at least one peripheral circuit being arranged in a peripheral circuit region which is held between the pair of substrates, and at least one driver circuit which is

electrically connected to the at least one peripheral circuit for driving at least one peripheral circuit being arranged outside of a region which is held between the pair of substrates. That is, the cited art, if considered to be disclose a peripheral circuit and a driver circuit connected in the manner set forth, provide a disclosure or teaching of the peripheral circuit and a driver circuit being held between the pair of substrates or both being arranged outside of a region which is held between the pair of substrates. Applicants note that such features were utilized in pointing out the differences between the claimed invention and the cited art, as now utilized in rejecting claims under 35 U.S.C. 102 and 35 U.S.C. 103, and applicants submit that claim 23 and the dependent claims patentably distinguish thereover and should be considered allowable thereover.

With respect to the individual references and the Examiner's position concerning previous claim 23, the Examiner contends that Morozumi teaches display area transistors and peripheral circuit transistors and inherently Morozumi teaches a driving circuit on a substrate external to the display substrate. Applicants submit that the Examiner has mischaracterized the disclosure of the individual references. For example, with respect to Morozumi, while the Examiner contends that at least the lines of Morozumi's peripheral circuit is between the substrate, applicants submit that col. 2, lines 29-36 of Morozumi does not disclose or teach the claimed features in relation to a part of the peripheral circuit is disposed between the pair of substrates, nor does Morozumi provide a disclosure about a connection between the driver circuit and the peripheral circuit or the location thereof. As to Aoki et al, applicants note that while this patent discloses the TFT peripheral circuit formed on the substrate, there is disclosure about the position of the peripheral circuit on the substrate and the Examiner's position concerning the lines connected to the matrix as a circuit, such lines represent wiring rather than the circuit. Also, applicants submit that Aoki et al does not disclose a connection between a driver circuit and a peripheral circuit as defined. As to Mochizuki et al, applicants submit that it is

apparent that such patent does not disclose the arrangement as now defined in claim 23, and additionally, does not disclose a connection between a driver circuit and the peripheral circuit in the manner defined. As to Kato et al, applicants submit that this patent does not disclose the position of the TFT peripheral circuit on the substrate, and while the Examiner refers to lines of Kato et al, such represent wiring rather than circuit, and does not disclose the electrical connection of a driver circuit arranged in the manner defined to the peripheral circuit. Likewise, Misawa et al may be considered to disclose a TFT peripheral circuit formed on a substrate, but does not disclose the position on the substrate and the electrical connection of a driver circuit with the peripheral circuit with the driver circuit and peripheral circuit being arranged in the manner defined. Thus, applicants submit that claim 23, as amended, and the dependent claims patentably distinguish over the aforementioned references in the sense of 35 U.S.C. 102 and should be considered allowable thereover.

With respect to independent claims 32, 38 and 42 and the dependent claims thereof, such claims recite the feature of an image signal peripheral circuit having a switch matrix circuit connected to the display region and a driver circuit electrically connected to the image signal peripheral circuit with the dependent claims reciting further features. Applicants submit that none of the aforementioned cited art utilized in rejecting claims under 35 U.S.C. 102 or Hashimoto et al utilized in rejecting claims under 35 U.S.C. 103, disclose or teach the recited features of the present invention, which contribute for lowering power for driving by combining the part of the peripheral circuit and employing a switch matrix circuit rather than a shift register circuit in the manner disclosed in the specification of this application. Thus, applicants submit that all claims present in this application patentably distinguish over the references utilized in rejecting the claims under 35 U.S.C. 102 and 35 U.S.C. 103, and all claims present in this application should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that the features of claims 23-47 added in this reissue application have proper basis in the original specification and that all claims are in compliance with 35 U.S.C. §112, and that the declaration should also be considered to be in compliance with 35 U.S.C. 251 and that all claims should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (503.33904RC1) and please credit any excess fees to such deposit account.

Respectfully submitted,



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503.33904RC1
S.N. 09/964,359

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Page 1, please amend the Cross-Reference to Related Application as follows::

CROSS REFERENCE TO RELATED APPLICATION

This is a continuation of U.S. Application Serial No. 09/964,359, filed September 28, 2001, which is a continuation of U.S. application Serial No. 09/644,979, filed August 24, 2000, now abandoned, which is a reissue of U.S. application Serial No. 08/507,990, filed July 27, 1995, now U.S. Patent No. 5,798,744, the subject matter of which is incorporated by reference herein.

IN THE CLAIMS:

Please amend claims 23, 26, 32, 34, 37, 38, 41 and 42 as follows:

23. (amended) A liquid crystal display apparatus comprising:
a pair of substrates, at least one of which is transparent;
a liquid crystal layer formed by sandwiching a liquid crystal composition
between said pair of substrates;
a display region having a plurality of first semiconductor elements which are
arranged in a matrix on one substrate of said pair of substrates;
at least one peripheral circuit having a plurality of second semiconductor
elements arranged at a periphery of said display region, said at least one peripheral
circuit being formed on said one substrate of said pair of substrates and at least one
part of said at least one peripheral circuit being arranged in a peripheral circuit
region which is held between said pair of substrates; and

at least one driver circuit which is electrically connected to said at least one peripheral circuit for driving said at least one peripheral circuit being arranged outside of a region which is held between said pair of substrates.

26. (amended) A liquid crystal display apparatus according to claim 23, wherein an amplitude of a liquid crystal driving source voltage of said at least one driver circuit is in a range of about 3V to no greater than about 5V.

32. (amended) A liquid crystal display apparatus comprising:
a pair of substrates, at least one of which is transparent;
a liquid crystal layer formed by sandwiching a liquid crystal composition between said pair of substrates;
a display region having a plurality of semiconductor elements arranged in a matrix on one substrate of said pair of substrates;
an image signal peripheral circuit which consists of a switch matrix circuit connected to said display region on one substrate of said pair of substrates; and
at least one driver circuit electrically connected to said image signal peripheral circuit.

34. (amended) A liquid crystal display apparatus according to claim 32, wherein at least one of said image signal peripheral circuit and said scanning signal; the peripheral circuit includes a plurality of semiconductor elements having at least one semiconductor island annealed by laser irradiation.

37. (amended) A liquid crystal display apparatus according to claim 36, wherein said switch matrix circuit comprises thin-film transistors, and said thin-film transistors have a mobility in the range of 100 cm²/Vs to 300 cm²/Vs.

38. (amended) A liquid crystal display apparatus comprising:
a pair of substrates, at least one of which is transparent;
a liquid crystal layer formed by enclosing a liquid crystal composition between
said pair of substrates;
a display region having a plurality of semiconductor elements arranged in a
matrix form on one substrate of said pair of substrates;
at least one image signal peripheral circuit having a switch matrix circuit
connected to said display region; and
at least one driver circuit, including at least one display information generating
circuit, electrically connected to said at least one image signal peripheral circuit.

41. (amended) A liquid crystal display apparatus according to claim ~~37~~ 40,
wherein said excimer laser is a XeCl excimer laser.

42. (amended) A liquid crystal display apparatus comprising:
a pair of substrates, at least one of which is transparent;
a liquid crystal layer formed by sandwiching a liquid crystal composition
between said pair of substrates;
a display region having a plurality of first semiconductor elements arranged in
a matrix form on one substrate of said pair of substrates; and
an image signal peripheral circuit having a switch matrix circuit connected to
said display region;
wherein only one driver circuit is electrically connected to said image signal
peripheral circuit for generating clock pulses and analog image signals.

Please add the following new claims:

--45. A liquid crystal display apparatus according to claim 42, wherein said
image signals are analog image signals.

46. A liquid crystal display apparatus according to claim 21, wherein the amplitude of the liquid crystal driving source voltage of said at least one driver circuit is no greater than about 3V.--